

REMARKS

This application has been reviewed in light of the Office Action dated October 8, 2003. Claims 1-21 and 34-45 are presented for examination, of which Claims 1, 10-12, and 34-36 are in independent form. Claims 1-21 have been amended to define Applicant's invention more clearly. Claims 22-33 have been canceled, without prejudice or disclaimer of the subject matter presented therein. New Claims 34-45 have been added to provide Applicant with a more complete scope of protection, and are storage-medium claims corresponding to Claims 10-21. Favorable reconsideration is requested.

As an initial matter, Applicant notes that the Office Action Summary, at item 13, does not indicate that a certified copy of the priority document for this application has been received. However, as shown in the attached copy of the returned receipt postcard bearing the stamp of the U.S. Patent and Trademark Office, a certified copy of the priority document was submitted on March 16, 2001. Applicant respectfully requests the Examiner to acknowledge receipt of the certified copy by marking the appropriate boxes in items 13(a) and 13(a) (1).

The Office Action states that Claims 3, 4, 7, 15, 16, 19, 27, 28, and 31 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Cancellation of Claims 27, 28, and 31 renders their rejections moot. Applicant has carefully reviewed and amended Claims 3, 4, 7, 15, 16, and 19, as deemed necessary, with special attention to the points raised in sections 2 and 3 of the Office Action. Applicants submit that the claims, as amended, are sufficiently definite under the second paragraph of § 112 and therefore respectfully requests withdrawal of the rejections.

The Office Action states that Claims 1 and 3-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,003,065 (Yan et al.) in view of U.S. Patent No. 5,014,093 (Ng), and further in view of the article "Integration of Black Only and Color Printers" (Morgan); that Claims 2 and 7-9 are rejected under § 103(a) as being unpatentable over Yan et al., Ng, and Morgan in view of U.S. Patent No. 4,893,153 (Sales et al.); that Claims 10-13, 15-18, 22-25, and 27-30 are rejected under § 103(a) as being unpatentable over Yan et al. in view of Morgan; that Claims 14, 19-21, 26, and 31-33 are rejected under § 103(a) as being unpatentable over Yan et al. in view of Morgan, and further in view of Sales et al.

Cancellation of Claims 22-33 renders their rejections moot. Applicant respectfully traverses the rejections of Claims 1-21 and submits that independent Claims 1, 10-12, and 34-36, together with the claims dependent therefrom, are patentably distinct from the cited prior art for at least the following reasons.

An aspect of the present invention set forth in Claim 1 is directed to an image formation system with a color image formation apparatus and a monochrome image formation apparatus each adapted to be connectable to a network. The system includes a separation unit, a mixing unit, and a control unit.

The separation unit is adapted to cause the color image formation apparatus to perform image formation of a color page included in a job in which the color page and a black/white page generated by a computer connected to the network mixedly exist, and to cause the monochrome image formation apparatus to perform image formation of the black/white page.

The mixing unit is adapted to mix sheets on which image formation has been

separately performed by the color image formation apparatus and the monochrome image formation apparatus in a predetermined order of the job. The mixing unit mixes a sheet that has been set on a sheet feed unit of the color image formation apparatus and on which image formation has been performed by the monochrome image formation apparatus with a sheet on which image formation has been performed by the color image formation apparatus, and mixes a sheet that has been set on the sheet feed unit of the monochrome image formation apparatus and on which image formation has been performed by the color image formation apparatus with a sheet on which image formation has been performed by the monochrome image formation apparatus.

When the sheet on which image formation has been performed by the color image formation apparatus is set on the sheet feed unit of the monochrome image formation apparatus and the sheet on which image formation has been performed by the color image formation apparatus is to be mixed with the sheet on which image formation has been performed by the monochrome image formation apparatus by the mixing unit, the control unit allows the monochrome image formation apparatus to perform image formation on a sheet to be mixed with a sheet on which image formation has been performed by the color image formation apparatus after the sheet on which image formation has been performed by the color image formation apparatus is set on the sheet feed unit of the monochrome image formation apparatus, and inhibits the monochrome image formation apparatus from performing image formation on the sheet to be mixed with the sheet on which image formation has been performed by the color image formation apparatus before the sheet on which image formation has been performed by the

color image formation apparatus is set on the sheet feed unit of the monochrome image formation apparatus.

One of the notable features of Claim 1, which will be referred to herein as A, is that the image formation system includes the color image formation apparatus and the monochrome image formation apparatus. For a job in which a color page and a black/white page coexist, the color image formation apparatus performs image formation for a color page, and the monochrome image formation apparatus performs image formation for a black/white page.

Another notable feature of Claim 1, which will be referred to herein as B, is that the image formation system includes a mixing unit, which mixes sheets on which image formation has been performed by the color image formation apparatus and the monochrome image formation apparatus, respectively, in a predetermined order of the job.

Yet another notable feature of Claim 1, which will be referred to herein as C, is that the mixing unit mixes a sheet that has been set on a sheet feed unit of one of the color image formation apparatus and the monochrome image formation apparatus and on which image formation has been performed by the other of the color and monochrome image formation apparatuses with a sheet on which image formation has been performed by the one of the color and monochrome image formation apparatuses.

A further notable feature of Claim 1, which will be referred to herein as D, is that the image formation system includes a control unit that allows the monochrome image formation apparatus to perform the image formation on a sheet to be mixed with a sheet on which image formation has been performed by the color image formation apparatus after the

sheet on which image formation had been performed by the color image formation apparatus is set on the sheet feed unit of the monochrome image formation apparatus, and that inhibits the monochrome image formation apparatus from performing image formation on the sheet to be mixed with the sheet on which image formation has been performed by the color image formation apparatus before the sheet on which image formation has been performed by the color image formation apparatus is set on the sheet feed unit of the monochrome image formation apparatus, when the sheet on which image formation has been performed by the color image formation apparatus is set on the sheet feed unit of the monochrome image formation apparatus and the sheet on which image formation has been performed by the color image formation apparatus is to be mixed with the sheet on which image formation has been performed by the monochrome image formation apparatus by the mixing unit.

Yan et al. relates to a system for distributed processing. As understood by Applicant, Yan et al. teaches that executable applications that run on a host device can be downloaded and executed on a peripheral device. Ng relates to a color copying apparatus that produces black images by using black toner instead of by using cyan, magenta, and yellow toners. Morgan relates to a system that inserts color-printed sheets between sets of sheets printed in black.

Applicant submits that a combination of Yan et al., Ng, and Morgan, assuming such combination would even be permissible, would fail to teach or suggest an image formation system that includes "a mixing unit adapted to mix sheets on which image formation has been separately performed by the color image formation apparatus and the monochrome image

formation apparatus in a predetermined order of the job, wherein the mixing unit is adapted to mix a sheet that has been set on a sheet feed unit of the color image formation apparatus and on which image formation has been performed by the monochrome image formation apparatus with a sheet on which image formation has been performed by the color image formation apparatus, and the mixing unit is adapted to mix a sheet that has been set on the sheet feed unit of the monochrome image formation apparatus and on which image formation has been performed by the color image formation apparatus with a sheet on which image formation has been performed by the monochrome image formation apparatus," and that includes "a control unit adapted to allow the monochrome image formation apparatus to perform image formation on a sheet to be mixed with a sheet on which image formation has been performed by the color image formation apparatus after the sheet on which image formation has been performed by the color image formation apparatus is set on the sheet feed unit of the monochrome image formation apparatus, and to inhibit the monochrome image formation apparatus from performing image formation on the sheet to be mixed with the sheet on which image formation has been performed by the color image formation apparatus before the sheet on which image formation has been performed by the color image formation apparatus is set on the sheet feed unit of the monochrome image formation apparatus, when the sheet on which image formation has been performed by the color image formation apparatus is set on the sheet feed unit of the monochrome image formation apparatus and the sheet on which image formation has been performed by the color image formation apparatus is to be mixed with the sheet on which image formation has been performed by the monochrome image formation apparatus by the mixing unit," as recited in Claim 1.

That is, the cited references are not understood to disclose or suggest the features C and D discussed above. Accordingly, Applicant submits that Claim 1 is patentable over the cited art, and respectfully requests withdrawal of the rejection under 35 U.S.C. § 103(a). Independent Claims 10 and 34 include features similar to those of Claim 1 and therefore are believed to be patentable for at least the reasons discussed above.

An aspect of the present invention set forth in Claim 11 is directed to a control method for an image formation system with a color image formation apparatus and a monochrome image formation apparatus each adapted to be connectable to a network. The method includes a color image formation step, a black/white image formation step, a collation step, and a control step. In the color image formation step, the color image formation apparatus is caused to perform image formation on a sheet of a color page included in a job in which the color page and a black/white page mixedly exist. In the black/white image formation step, the monochrome image formation apparatus is caused to perform image formation on a sheet of the black/white page in the job.

In the collation step, a sheet that has been set on a sheet feed unit of the color image formation apparatus and on which image formation has been performed by the monochrome image formation apparatus is collated with a sheet on which image formation has been performed by the color image formation apparatus, or a sheet that has been set on a sheet feed unit of the monochrome image formation apparatus and on which image formation has been performed by the color image formation apparatus is collated with a sheet on which image formation has been performed by the monochrome image formation apparatus.

In the control step, the color image formation apparatus is allowed to perform image formation on a sheet to be collated with a sheet on which image formation has been performed by the monochrome image formation apparatus after the sheet on which image formation has been performed by the monochrome image formation apparatus is set on a sheet feed unit of the color image formation apparatus, and the color image formation apparatus is inhibited from performing image formation to the sheet to be collated with the sheet on which image formation has been performed by the monochrome image formation apparatus before the sheet on which image formation has been performed by the monochrome image formation apparatus is set on the sheet feed unit of the color image formation apparatus, when the sheet on which image formation has been performed by the monochrome image formation apparatus is set on the sheet feed unit of the color image formation apparatus and the sheet on which image formation has been performed by the monochrome image formation apparatus and the sheet on which image formation has been performed by the color image formation apparatus are to be collated with each other in the collation step.

One of the notable features of Claim 11, which will be referred to herein as E, is that the image formation system includes the color image formation apparatus and the monochrome image formation apparatus. For a job in which a color page and a black/white page coexist, the color image formation apparatus performs image formation for a color page, and the monochrome image formation apparatus performs image formation for a black/white page.

Another notable feature of Claim 11, which will be referred to herein as F, is that the method includes a collation step in which a sheet that is set on a sheet feed unit of one of

the color image formation apparatus and the monochrome image formation apparatus and on which image formation has been performed by the other of the color and monochrome image formation apparatuses is collated with a sheet on which image formation has been performed by the one of the color and monochrome image formation apparatuses.

Yet another notable feature of Claim 11, which will be referred to herein as G, is that the method includes a control step in which the color image formation apparatus is allowed to perform image formation on a sheet to be collated with a sheet on which image formation has been performed by the monochrome image formation apparatus after the sheet on which image formation had been performed by the monochrome image formation apparatus is set on a sheet feed unit of the color image formation apparatus, and the color image formation apparatus is inhibited from performing image formation to the sheet to be collated with the sheet on which image formation has been performed by the monochrome image formation apparatus before the sheet on which image formation has been performed by the monochrome image formation apparatus is set on the sheet feed unit of the color image formation apparatus, when the sheet on which image formation has been performed by the monochrome image formation apparatus is set on the sheet feed unit of the color image formation apparatus and the sheet on which image formation has been performed by the monochrome image formation apparatus and the sheet on which image formation has been performed by the color image formation apparatus are to be collated with each other in the collation step.

Applicant submits that a combination of Yan et al., Ng, and Morgan, assuming such combination would even be permissible, would fail to teach or suggest a control method for

an image formation system, wherein the method includes "a collation step of collating: a sheet that has been set on a sheet feed unit of the color image formation apparatus and on which image formation has been performed by the monochrome image formation apparatus with a sheet on which image formation has been performed by the color image formation apparatus, or a sheet that has been set on a sheet feed unit of the monochrome image formation apparatus and on which image formation has been performed by the color image formation apparatus with a sheet on which image formation has been performed by the monochrome image formation apparatus," and that includes "a control step of allowing the color image formation apparatus to perform image formation on a sheet to be collated with a sheet on which image formation has been performed by the monochrome image formation apparatus after the sheet on which image formation has been performed by the monochrome image formation apparatus is set on a sheet feed unit of the color image formation apparatus, and inhibiting the color image formation apparatus from performing image formation to the sheet to be collated with the sheet on which image formation has been performed by the monochrome image formation apparatus before the sheet on which image formation has been performed by the monochrome image formation apparatus is set on the sheet feed unit of the color image formation apparatus, when the sheet on which image formation has been performed by the monochrome image formation apparatus is set on the sheet feed unit of the color image formation apparatus and the sheet on which image formation has been performed by the monochrome image formation apparatus and the sheet on which image formation has been performed by the color image formation apparatus are to be collated with each other in the collation step," as recited in Claim 11.

That is, the cited references are not understood to disclose or suggest the features F and G discussed above. Accordingly, Applicant submits that Claim 11 is patentable over the cited art, and respectfully requests withdrawal of the rejection under 35 U.S.C. § 103(a). Independent Claim 35 includes features similar to those of Claim 11 and therefore is believed to be patentable for at least the reasons discussed above.

An aspect of the present invention set forth in Claim 12 is directed to a control method of an image formation system with a first image formation apparatus and a second image formation apparatus, in which the first image formation apparatus is adapted to perform a collation process on a sheet that is set on a sheet feed unit provided in the first image formation apparatus and on which printing has been performed by the second image formation apparatus with a sheet on which printing has been performed by the first image formation apparatus, and in which the second image formation apparatus is adapted to perform a collation process on a sheet that is set on a sheet feed unit provided in the second image formation apparatus and on which printing has been performed by the first image formation apparatus with a sheet on which printing has been performed by the second image formation apparatus.

The method includes a dispersion step and a control step. In the dispersion step, both the first and second image formation apparatuses are caused to perform printing of data generated by a superordinate apparatus. In the control step, the first image formation apparatus is allowed to perform printing on the sheet to be collated with the sheet on which printing has been performed by the second image formation apparatus after the sheet on which printing has been performed by the second image formation apparatus is set on the sheet feed unit

of the first image formation apparatus, and the first image formation apparatus is inhibited from performing printing on the sheet to be collated with the sheet on which printing has been performed by the second image formation apparatus before the sheet on which printing has been performed by the second image formation apparatus is set on the sheet feed unit of the first image formation apparatus, when the sheet that is set on the sheet feed unit of the first image formation apparatus and on which printing has been performed by the second image formation apparatus and the sheet on which printing has been performed by the first image formation apparatus are to be collated with each other by the first image formation apparatus.

One of the notable features of Claim 12, which is referred to herein as H, is that the method includes a dispersion step in which the first and second image formation apparatuses are caused to perform printing of data generated by a superordinate apparatus.

Another notable feature of Claim 12, which is referred to herein as I, is that the method includes a control step in which the first image formation apparatus is allowed to perform printing on a sheet to be collated with a sheet on which printing has been performed by the second image formation apparatus after the sheet on which printing has been performed by the second image formation apparatus is set on a sheet feed unit of the first image formation apparatus, and the first image formation apparatus is inhibited from performing printing on the sheet to be collated with the sheet on which printing has been performed by the second image formation apparatus before the sheet on which printing has been performed by the second image formation apparatus is set on the sheet feed unit of the first image formation apparatus, when the sheet that is set on the sheet feed unit of the first image formation apparatus and on which

printing has been performed by the second image formation apparatus and the sheet on which printing has been performed by the first image formation apparatus are to be collated with each other by the first image formation apparatus.

Applicant submits that a combination of Yan et al., Ng, and Morgan, assuming such combination would even be permissible, would fail to teach or suggest a control method of an image formation system, wherein the method includes "a control step of allowing the first image formation apparatus to perform printing on the sheet to be collated with the sheet on which printing has been performed by the second image formation apparatus after the sheet on which printing has been performed by the second image formation apparatus is set on the sheet feed unit of the first image formation apparatus, and inhibiting the first image formation apparatus from performing printing on the sheet to be collated with the sheet on which printing has been performed by the second image formation apparatus before the sheet on which printing has been performed by the second image formation apparatus is set on the sheet feed unit of the first image formation apparatus, when the sheet that is set on the sheet feed unit of the first image formation apparatus and on which printing has been performed by the second image formation apparatus and the sheet on which printing has been performed by the first image formation apparatus are to be collated with each other by the first image formation apparatus," as recited in Claim 12.

That is, the cited references are not understood to disclose or suggest the feature I discussed above. Accordingly, Applicant submits that Claim 12 is patentable over the cited art, and respectfully requests withdrawal of the rejection under 35 U.S.C. § 103(a).

Independent Claim 36 includes a feature similar to that of Claim 12 and therefore is believed to

be patentable for at least the reasons discussed above.

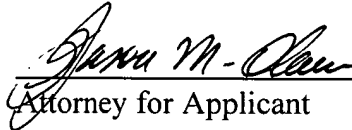
The other claims in this application depend from one or another of the independent claims discussed above, and therefore are submitted to be patentable for at least the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, individual consideration or reconsideration, as the case may be, of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

CONCLUSION

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,


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